FINAL REPORT
ON THE SITE INVESTIGATION
OF THE
CAPITOL ENGINEERING PROPERTIES
AT
724 EAST SOUTHERN PACIFIC DRIVE
AND
415, 419 SOUTH 7TH STREET,
PHOENIX, ARIZONA

Prepared by:
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June 9, 1989

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1.0 INTRODUCTION

In response to being listed as a "Priority Facility" in the Draft Phase I Report, Eastlake Park Area, October 1988, Capitol Engineering contracted Water Resources Associates, Inc. (WRA) to conduct a comprehensive environmental assessment and site investigation of the subject properties. Capitol was identified in the Draft Phase I report as a priority facility on the basis of their returned questionnaire in which it was documented that limited amounts of solvents were used, although primarily only in spray cans.

A number of documents regarding the subject properties have already been forwarded to the Arizona Department of Environmental Quality (ADEQ) by Water Resources Associates. The title and date of each document is listed below:

1. Work Plan For the Environmental Assessment and Site Investigation of the Capitol Engineering Properties, December 27, 1988.

2. Soil Vapor Surveys of the Capitol Engineering Properties, January 17, 1989.

3. Underground Storage Tank Removal at 724 East Southern Pacific Drive, January 17, 1989.

4. Final Work Plan for the Environmental Assessment and Site Investigation of the Capitol Engineering Properties, April 3, 1989.

The contents of each of these reports are summarized below. The Work Plan (item 1) represented the Draft submitted to ADEQ which detailed the results of WRA's records review and site visits, and provided the recommendations and sampling plans for the further site investigation. It was evidenced during the records review and early site visits that although Capitol Engineering

had not directly contributed to environmental impairment on-site, the activities of previous owners or lessees of the properties may have potentially contributed to environmental degradation. Therefore, a sampling program was prepared by WRA and presented in the Work Plan. The Work Plan also contained information which documented the potential impacts of facilities neighboring the properties at 415 and 419 South 7th Street and 724 East Southern Pacific Drive.

The Soil Vapor Survey (item 2) was conducted in two distinct site locations- on the 724 East Southern Pacific Drive property around Capitol's 250-gallon underground storage tank and north of the shop building at 415 South 7th Street near the Smith Pipe and Steel fence line where unregistered tanks were located.

The Underground Storage Tank Removal (item 3) was implemented by Capitol Engineering. The 250-gallon tank was removed without incident. No leaks had occurred.

The Final Work Plan (item 4) was developed from interaction between the ADEQ and Capitol Engineering as described below:

- Meeting between ADEQ (Lowell Carty, Wyn Ross, Steve Silver), Water Resources Associates, Inc. (Ed Ricci), Lancy, Scult & McVey (Ken Hodson), and Capitol Engineering (David Porter) on February 17, 1989 at ADEQ.

- Site visit of Capitol Engineering and surrounding area by ADEQ (Lowell Carty, Wyn Ross) with WRA (Ed Ricci) and Capitol Engineering (David Porter) on February 22, 1989.

- Review comments on Draft Work Plan by ADEQ (signed Lowell Carty) on March 10, 1989.

- Telephone communication between ADEQ (Lowell Carty) and WRA (Ed Ricci) on March 27, 1989.

A number of specific ADEQ review comments relating to the conduct of the field sampling program were responded to in the context of the Final Work Plan. Other ADEQ comments which required further information gathering or field study are responded to in the context of this Final Report on the Site Investigation and are presented in Attachment I.

The main emphasis of the Final Work Plan was the presentation of the sampling and analysis plan for further investigation of the subject properties.

2.0 SAMPLING AND ANALYSIS PLAN

2.1 SAMPLING DESIGN

The sampling locations were identified during site visits by WRA on November 10, 1988 and on December 6, 1988. Sample locations are shown on Figure 1. Sampling was targeted in these locations to determine the residual soil quality near the surface and in selected drains and dry wells at the site and to verify that solvents were not discharged to the subsurface. Additionally, other locations were sampled to evaluate whether adjacent properties have impacted the Capitol properties. The coded locations are listed and described more fully below:

Code	Area	Contaminants of Concern	Objective
A	Rail Spur Soils	Pesticides, Hydrocarbons Nutrients	Evaluate potential impacts of Chemonics, Smith Pipe & Steel, Southern Pacific RR, and Economy Foods
B	Dry Well Sludges	Hydrocarbons, Nutrients	Evaluate potential impacts of past and present solvent use and surface runoff
C	Sedimentation Basins (hereafter called sumps)	Hydrocarbons	Evaluate potential impacts of past and present solvent use
D	Drains	Hydrocarbons	Evaluate potential impacts of past and present solvent use

The field sampling program was organized to focus in those areas where the potential for environmental hazards was indicated by the gathering of historical information. Specifically, this area encompasses the drains, dry wells and sumps identified at the 415 and 419 South 7th Street locations, and the rail spur area. Historical information and current practices did not support sampling at the 724 East Southern Pacific Drive location.

The rail spur area was sampled for several purposes. Four samples were collected at nearly equidistant distances along the rail spur area.

Sample A-1 was collected as a surface grab sample (ground surface to 6-inches) to monitor the potential impacts of run-off from the adjacent Chemonics shop buildings and run-off through the rail spur area. A significant volume of overland run-off reportedly flows down the rail spur area from east to west during storm run-off events. Samples A-2 and A-3 were collected further down the rail spur area to the west at a soil depth of 1.0 to 1.5-feet below ground surface. Sample A-4 was collected in the surface soils of the rail spur area behind the Economy Food Service building. This location was selected to detect possible discharges at a pipe extending from the Economy building.

One sludge sample each, B-1 and B-2, was collected in the two dry wells located in the shop building at 419 South 7th Street. The 8-inch drain also located here was not sampled since it elbowed several inches below the ground surface.

Sludge and water samples were collected from the west sump closest to 7th Street (sample C-1) and from the east sump closest to the shop building at 415 South 7th Street (sample C-2). The three sumps on the west side of 415 South 7th Street are interconnected. The middle sump was not sampled.

A soil sample (D-1) was collected from the drain which is connected to the three outside sumps.

All near-surface samples were collected using a stainless steel trowel or hand auger. Samples were placed in 8 oz. glass jars, properly labeled and immediately placed on ice.

Soil (sludge) samples that were collected in the dry wells, sumps, and drains, were obtained using a 10-foot section of PVC pipe. The soil (sludge) samples were placed in 1-quart glass jars, properly labeled, and immediately placed on ice.

All sampling equipment was decontaminated prior to obtaining the first sample and between samples to avoid cross-contamination. Each sampling device was thoroughly washed with a laboratory-grade detergent, followed by a clean water wash and deionized water rinse. Each sample collected was transported, on ice, and delivered to Arizona Testing Laboratories in Phoenix, Arizona. Copies of chain-of-custody records were maintained and are presented as Attachment II.

Samples at locations A-1, A-2, A-3, A-4, B-1, B-2, and C-1 were collected on March 31, 1989. Subsequent to preliminary verbal results forwarded by the laboratory performing the analyses, Arizona Testing Labs, additional samples were collected on April 18, 1989 at locations C-2, D-1, and C-1 (a re-sample of the original C-1 sample).

2.2 ANALYTICAL DESIGN

Presented below is a matrix of the sample locations and constituents selected for analysis:

Constituent/Analyses Method	Location								
	A-1	A-2	A-3	A-4	B-1	B-2	C-1	C-2	D-1
Chlorinated Solvents EPA Method 8010	X	X	X	X	X	X	X	X	X
Aromatic Petroleum Hydrocarbons EPA Method 8020	X	X	X	X					
Total Petroleum Hydrocarbons EPA Method 8015	X	X	X						
Chlorinated Pesticides/ Polychlorinated biphenyls (PCBs) EPA Method 8080	X		X						
Chlorinated Herbicides EPA Method 8150	X								
Organophosphate Pesticides EPA Method 8140	X								
Fertilizers Nitrate(NO_3), Phosphate(PO_4), Potassium(K) EPA Methods 9200/6010	X	X	X	X	X	X	X		

3.0 RESULTS

Detailed analytical results (laboratory analysis records) are presented in Attachment III. The results for each sample area are discussed below.

3.1 DRY WELLS (Sample Location B)

No contamination was shown in either of the two dry wells at the 419 South 7th Street property.

3.2 SUMPS (Sample Location C) and DRAIN (Sample Location D)

Two contaminants were observed in the drain and sump (collection basin) system (Table I). These were 1,1,1-trichloroethane (TCA) and 1,1-dichloroethane (1,1-DCA). No other solvents including TCE, DCE, PCE, or methylene chloride were detected. The sample matrix was generally a liquidy sludge in the sumps and almost completely soil in the drain. Samples C-1 and D-1 were each analyzed in two fractions - the sludge/water matrix and the more dense soil/sludge matrix. The compounds TCA and 1,1-DCA were observed at levels below ADEQ action levels.

The highest concentration of chlorinated volatile organics occurred in the soil/sludge matrix of the west sump (sample C-1). The compound TCA was observed at 2,400 parts per billion (ppb) and 1,1-DCA at 530 ppb.

3.3 RAIL SPUR AREA (Sample Location A)

No chlorinated organic solvents or petroleum hydrocarbon residuals were detected in the rail spur soils. However, polychlorinated biphenyls (PCBs) were detected in the two soil samples analyzed for PCBs at sample locations A-1 and A-3 (Table 2). The PCB concentration detected in the shallow soils

(upper 6-inches) at sample location A-1 was 140,000 ppb. This was two orders of magnitude higher than concentrations observed in deeper soils (1-foot to 1.5-feet) at sample location A-3. Trace levels of DDT were reported by the laboratory in sample A-1. The pesticides DDT and DDE were observed in detectable levels in sample A-3.

Samples were analyzed for nutrients in the rail spur sample locations, in the two dry wells, and in one of the sumps (Table 3). The primary objective was to evaluate whether contamination from overland run-off was contributed by sources upgradient from Capitol Engineering. Potassium levels in the A-1 sample were notably higher than those observed at other locations.

4.0 DISCUSSION AND FURTHER ACTION

Two distinct areas of contamination were evidenced during the site investigation - solvents in the drains and sump system and PCBs/pesticides in the rail spur area. These will be discussed separately below.

4.1 SOLVENTS

Although TCA concentrations observed in the drain and sump system were lower than State action levels, their occurrence posed a concern regarding their potential impact on the subsurface and underlying ground water.

On May 17, 1989 the three sumps (collection basins) located adjacent to the street at the 415 South 7th Street location (sample location C) and the 10-inch drain located inside the building at the same address (sample location D) were vacuum pumped by Southwest Vactor Service, Inc.. Each collection basin and the 10-inch drain were thoroughly vacuumed until dry and free of all soil, sludge or debris. Approximately 350-gallons of sludge, soil and wastewater were removed and placed into seven 55-gallon drums located on-site. The drums were placed on wooden pallets and were underlain by plastic sheets. Removal and disposal of the drums in accordance with RCRA guidelines was arranged with Rinchem Resource Recovery.

Immediately following the evacuation of the three collection basins and the 10-inch drain, each was inspected to determine the existence of any possible cracks or pathways which could potentially lead to the subsurface.

Each collection basin had a concrete floor completely enclosed by concrete walls, with approximate dimensions of 4 feet by 4 feet by 6 feet. Small openings (6 inches by 6 inches) on both sides of the centrally located collection basin, allow transport of sediments and wastewater between all three basins. Overflow wastewater from the westernmost basin flows

directly into the City sewer system. No structural problems, cracks or pathways into the subsurface were observed in the three collection basins.

The 10-inch drain consists of a 10-inch diameter sump with a depth of approximately 1.7 feet. A 3-inch steel pipe connects the 10-inch sump to the easternmost collection basin. No structural problems or pathways into the subsurface were observed at the 10-inch drain.

Based on information provided by Kleinfelder in the Draft Phase I Report and on information obtained by WRA, the water quality record for wells upgradient and downgradient from the Capitol Engineering site is presented in Attachment IV. As shown by this information, there is no indication of ground-water quality impacts by the Capitol properties. Downgradient wells generally show lower levels of contamination compared to upgradient wells. The compounds TCA and 1,1-DCA are relatively insignificant constituents in the existing ground-water quality degradation of the area.

No further work is recommended regarding investigation or clean-up of organic solvents at the Capitol facilities. Capitol Engineering should maintain rigorous waste management procedures for the low volume of solvents which they routinely use in the course of business operations.

4.2 POLYCHLORINATED BIPHENYLS (PCBs)/PESTICIDES

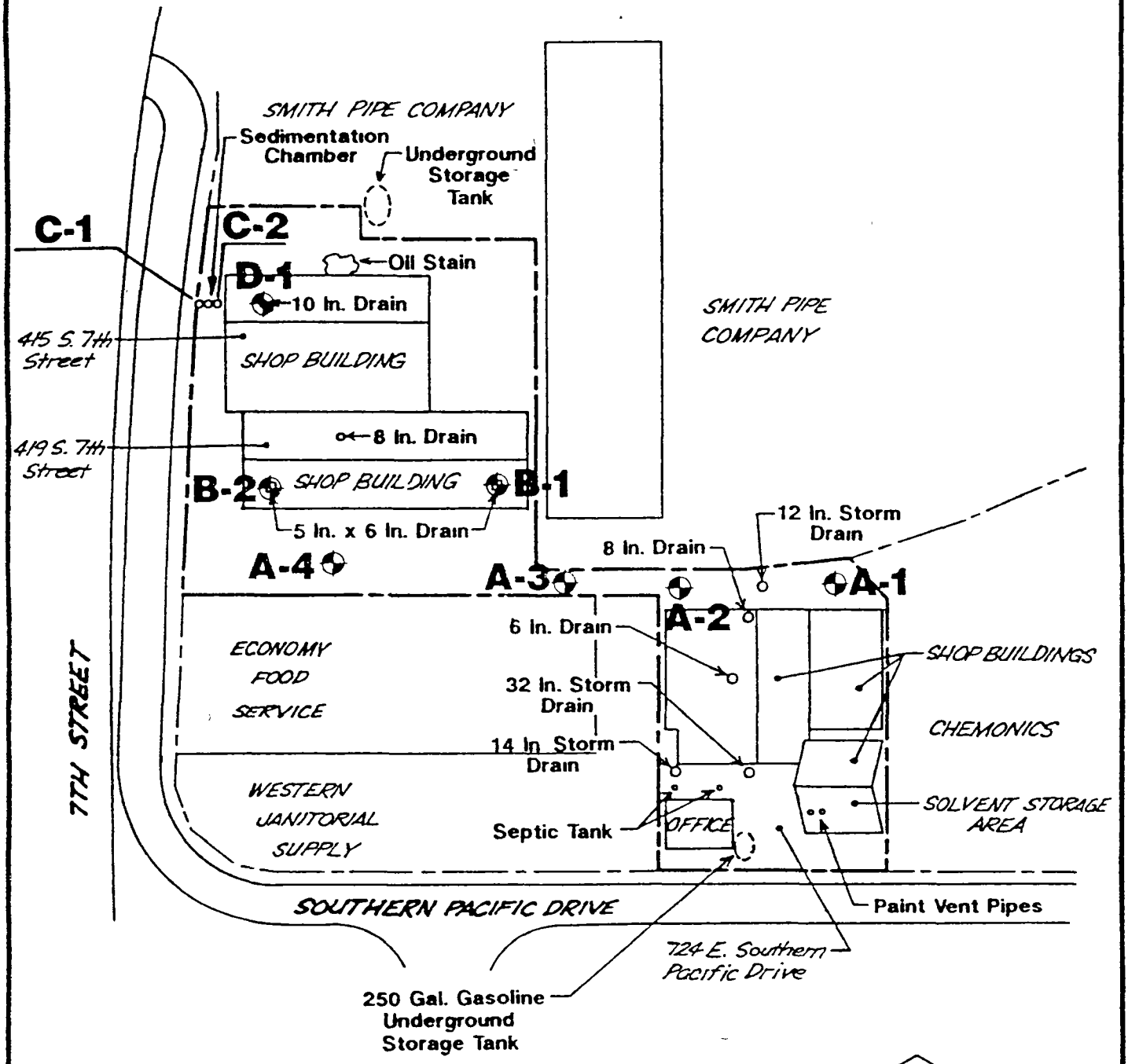
The horizontal and vertical extent of PCB/pesticide contamination in the rail spur area was not determined during this investigation. The two samples collected for PCB/pesticide analysis indicate that the contamination may be most prevalent in the very shallow subsurface and in the east section of the rail spur area.

There was no evidence developed during this study which showed the use or disposal of pesticides or PCBs in the rail spur area. Presented in Attachment V is a summary of ownership and property usage records for the three subject properties. There was presumably no usage of PCB/pesticides by any owners or lessees of the properties subsequent to ownership or usage by Southern Pacific Railroad Company. Possible sources of PCB/pesticide residuals by Southern Pacific may include chemical treatment of railroad ties, vegetation control near the tracks, or spillage along the rail line.

The rail spur area is subject to significant overland runoff from the east. Potential upgradient sources of contamination are the Southern Pacific Railroad Company yard and connecting rail spur area, and the Chemonics facility. It is understood that Chemonics distributed organochlorine pesticides in the past. The high concentration of the degradative product DDE compared to the parent compound DDT found in the rail spur soils indicates an old residual source.

It is recommended that the ADEQ is notified concerning the PCB and pesticide residuals observed. Because the rail spur area on the subject property is affected by overland runoff from the east, it does not seem practical at this time to conduct a remedial program. Sources of contamination should be identified and the scope of the investigation should be extended to upgradient areas including the railroad yard, connecting spur area, and Chemonics. Southern Pacific and Chemonics should be required to investigate the extent of the PCB contamination on their properties which are upgradient from the Capitol facilities. After the extent and source of contamination is identified, a remedial program may be adopted.

FIGURES



Water Resources Associates, Inc.	SAMPLE LOCATIONS	FIGURE 1
PROJECT NO 3400 DRAWN BY KMA		
DATE 4/19/89 CHECKED BY KDH		

TABLES

TABLE 1

DETECTABLE ANALYTICAL RESULTS OF ORGANIC ANALYSES

SUMPS AND DRAIN

			EPA METHOD 8010 ANALYSIS	
			TCA	1,1-DCA
C-1	Outside Sump Adjacent to Street	Sludge/Water (ug/l)A	170 ppb	26 ppb
		Soil/Sludge (ug/kg)	2,400 ppb	530 ppb
C-2	Sump Closest to Building	Sludge (ug/l)B	41.5 ppb	17 ppb
D-1	Drain connection to C-2	Sludge/Water (ug/l)B	31.5 ppb	37.5 ppb
		Soil (ug/kg)	200 ppb	120 ppb
MCL		Water (ug/l)	200 ppb	5 ppb (1,2-DCA)
Action Level		Soil (ug/Kg)	20,000 ppb	38 ppb (1,2-DCA)

MCL - EPA's Maximum Contaminant Level

A Mean of two field samples
B Mean of two laboratory samples

TABLE 2

DETECTABLE ANALYTICAL RESULTS OF ORGANIC ANALYSES
RAIL SPUR AREA

		EPA METHOD 8080 ANALYSES
A-1	Soil Near Chemonics (Upper 6-inches)	PCBs - 140,000 ppb; DDT - trace levels
A-3	Soil Down RR Spur (1-foot to 1.5-foot)	PCBs - 6,200 ppb; DDT - 44 ppb; DDE - 1,200 ppb

EPA Recommnded Clean-Up Standard 25,000 ppb

TABLE 3

ANALYTICAL RESULTS OF INORGANIC ANALYSES

Sample No.	Location	NO_3	P04	K
B-1	Dry Well	0.8	<0.4	1.5
B-2	Dry Well	1.6	<0.4	1.8
C-1	Sump	0.5	19.	8.1
A-1	Rail Spur	4.1	2.0	190.
A-2	Rail Spur	37.	9.4	57.
A-3	Rail Spur	47.	3.0	54.
A-4	Rail Spur	7.0	0.82	32.

ATTACHMENTS

ATTACHMENT I

RESPONSES TO ADEQ COMMENTS

ATTACHMENT I

Responses to ADEQ Comments

The following list represents the Arizona Department of Environmental Quality (ADEQ) comments which were not responded to in the Final Work Plan:

Page 2 - Paragraph 4 **Specify what solvents were used in the process called "bonderizing".**

No historical records or personal interviews showed specifically which solvents were used in the bonderizing process. It is expected that the solvents that were probably used by Phoenix Manufacturing Company during the late 1970's are among the twenty-seven chlorinated solvents detected by EPA Method 8010. The sludges in sumps, dry wells, and drains on the 415 and 419 South 7th Street properties were analyzed for solvents by Method 8010.

Page 6 - Paragraph 1 **Determine if the septic tanks were properly closed.**

As stated in the Final Work Plan, there are no closure records available for the septic tanks. The City of Phoenix indicates that this is not unusual for facilities which convert their domestic waste systems from septic to City sewerage.

Page 6 - Paragraph 2 **Is the septic tank still in use? What was the improvement? What is it used for?**

Based on communications with Mr. David Porter of Capitol Engineering, the improvement does not regard the septic system but the construction of an additional drain (14-inch drain) for stormwater runoff collec-tion (see Figure 1). This drain was located near the existing septic systems. The septic system at 724 East Southern Pacific Drive is still in use and serves two toilets, one located in the office and one in the shop building.

Page 7 - Paragraph 2 **Demonstrate the connection of the two inside drains to the outside drain.**

Mr. David Porter of Capitol Engineering reported that the two inside drains and outside drain are interconnected. He demonstrated this by flushing water through the drains with a garden hose. Mr. Howard Clifford, Vice President of Capitol Engineering, verified the interconnection since he witnessed the installation of the storm run-off drains at the 724 East Southern Pacific Drive property.

Page 8 - Paragraph 1 **What is the depth of this contamination?**

In conjunction with field sampling conducted on March 31, 1989, Water Resources Associates determined the depth of the staining to be 5-inches below the ground surface.

Page 16 - Paragraph 1 **Authorization or approval of Remedial Action Plans are necessary under the QWARF Program. If Capitol Engineering Inc. wishes to proceed under the QWARF Program, then the requirements specified in the Arizona Administrative Codes Chapter 7, Article 1, R18-07-107B should be followed.**

Capitol Engineering appreciates this guidance by the Department and is taking this advisement under consideration.

ATTACHMENT 2

CHAIN-OF-CUSTODY RECORDS

CHAIN OF CUSTODY RECORD

Client Name: WATER RESOURCES ASSOCIATES

Samplers: (Signature) [signature]

Sample Ident.	Date	Time	COMP	GRAB	Sample Location	Number of Containers	Analysis Method: 601/5020	Additional Tests Required	Laboratory Number
SAMPLE #1	12/20	2:45 PM		✓	TANK PIT	1	X	results by telephone.	
SAMPLE #2	12/20	2:45 PM		✓	TANK PIT	1	X	12/21 by 1 pm	
								before analysis	

Relinquished By:	Date/Time	Received By: (Sign)	Relinquished By:	Date/Time	Received By (Signature)
KEVIN HESSERT	12/20/88 4:00P	[signature]			
Relinquished By:	Date /Time	Received By: (Sign)	Relinquished By:	Date/Time	Received By (Signature)
Relinquished By:	Date/ Time	Received By: (Sign)	Date/Time	Remarks:	

ARIZONA TESTING LABORATORIES:
817 West Madison Street
Phoenix, Arizona 85007

CLIENT INFORMATION

Client Name:	Address:	City:	State:	Zip Code:	Phone Number:	Contact:
WATER RESOURCES ASSOC.	2702 N. 44th St.	Phnx	AZ	85008	381-1844	K. HEBERT

Project Identification:	Project Manager:	Name of Sampler (Please Print):	Sampler Signature:	Date:
CAPITOL 3400	ED RICCI	KEVIN HEBERT	Kevin Hebert	3/31

SAMPLE INFORMATION

Sample Description:

Soil___ Waste___ Other (Describe):___

Water___ Oil___

Wastewater X Groundwater___

No.	Sample Identification:	Date:	Time:	Comp.	Grab	Sample Location:	Number of Containers	SAMPLE METHOD	ANALYSIS METHOD: 8010	ANALYSIS METHOD: NO3, Pb, K	Additional Tests Required
01	B-1	3/31/81	3.15		X	CAPITOL	1		X	X	
02	B-2	↓	3.00		↓	↓	1		X	X	
03	C-1	↓	2.00		↓	↓	2		X	X	
04											
05											
06											
07											
08											
09											
10											

LABORATORY

Arizona Testing Laboratories

817 West Madison Street □ Phoenix, Arizona 85007 □ 602/254-6181

SPECIAL INSTRUCTIONS

FOR SAMPLE C-1, RUN THE SAMPLE THAT WILL GET THE BEST RESULTS

CUSTODY CHAIN

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
Kevin Hebert	3/31 14:45	A M Lieb					
Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:

CLIENT INFORMATION

Client Name:	Address:	City:	State:	Zip Code:	Phone Number:	Contact:
WATER RESOURCES ASSOC	2702 N. 44th St.	Phnx	AZ.	85008	381-1844	K. Hebert

Project Identification:	Project Manager:	Name of Sampler (Please Print):	Sampler Signature:	Date
CAPITOL 3400	ED RICCI	KEVIN HEBERT	Kevin Hebert	3/31

SAMPLE INFORMATION

Sample Description:

Soil X Waste___ Other (Describe):___

Water___ Oil___

Wastewater___ Groundwater___

No.	Sample Identification:	Date:	Time:	Comp	Grab	Sample Location:	Number of Containers	SAMPLE METHOD	ANALYSIS METHOD: 8080, 8140, 8150	8010	8015	8020	NO3, PO4, K	Additional Tests Required
01	A-1	3/31/89	12:00		X	CAPITOL	1		X	X	X	X	X	
02	A-2	3/31/89	12:30		↓	↓	1			X	X	X	X	
03	A-3	3/31/89	1:00				1			X	X	X	X	
04	A-4	3/31/89	1:20				1			X		X	X	
05														
06														
07														
08														
09														
10														

LABORATORY

Arizona Testing Laboratories

817 West Madison Street ☐ Phoenix, Arizona 85007 ☐ 602/254-6181

SPECIAL INSTRUCTIONS

CUSTODY CHAIN

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
Kevin Hebert	3/31/89 4:45	A M Lind					
Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION

Client Name:	Address:	City:	State:	Zip Code:	Phone Number:	Contact:
WRA	2702 N 44th St	Phnx	AZ	85008	381-1844	KEVIN HERBERT

Project Identification:	Project Manager:	Name of Sampler (Please Print):	Sampler Signature:	Date:
CAPITOL 3416	ED RICCI	KEVIN HERBERT	[signature]	4/18/91

SAMPLE INFORMATION

Sample Description:

Soil___ Waste___ Other (Describe): WASTEWATER/SLUDGE
Water___ Oil___
Wastewater___ Groundwater___

No.	Sample Identification:	Date:	Time:	Comp.	Grab	Sample Location:	Number of Containers	SAMPLE METHOD: PVC PIPE	ANALYSIS METHOD: 8010	Additional Tests Required
01	C-1-2	4/18	3:00	X		415 S. 7th St.	1	X	X	
02	C-2	↓	3:30	↓		↓	1	X	X	
03	D-1	↓	2:45	↓		↓	1	X	X	
04										
05										
06										
07										
08										
09										
10										

LABORATORY

Arizona Testing Laboratories
817 West Madison Street ☐ Phoenix, Arizona 85007 ☐ 602/254-6181

SPECIAL INSTRUCTIONS

CUSTODY CHAIN

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	4/18/91 4:02	J.M. Alexander	4/18/91 4:02 pm				
Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:

ATTACHMENT 3

ANALYTICAL RESULTS

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For. Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab No.: 516007

Sample: Waste

Marked. C-1
Capitol 3400
Sampled: 03/31/89, 2:00 p.m.

Received 03/31/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	9.5	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	210.	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab. No.: 516007

Sample: Sludge

Marked. C-1
Capitol 3400
Sampled: 03/31/89, 2:00 p.m.

Received 03/31/89

Submitted by Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 50.	ug/kg
Bromomethane	< 50.	
Vinyl chloride	< 50.	
Chloroethane	< 50.	
Methylene chloride	< 50.	
1,1-Dichloroethene	< 50.	
1,1-Dichloroethane	530.	
trans-1,2-Dichloroethene	< 50.	
Chloroform	< 50.	
1,2-Dichloroethane	< 50.	
1,1,1-Trichloroethane	2400.	
Carbon tetrachloride	< 50.	
Bromodichloromethane	< 50.	
1,2-Dichloropropane	< 50.	
trans-1,3-Dichloropropene	< 50.	
Trichloroethylene	< 50.	
Dibromochloromethane	< 50.	
1,1,2-Trichloroethane	< 50.	
cis-1,3-Dichloropropene	< 50.	
2-Chloroethylvinyl ether	< 50.	
Bromoform	< 50.	
1,1,2,2-Tetrachloroethane	< 50.	
Tetrachloroethylene	< 50.	
Chlorobenzene	< 50.	
1,3-Dichlorobenzene	< 50.	
1,2-Dichlorobenzene	< 50.	
1,4-Dichlorobenzene	< 50.	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date. April 25, 1989

Lab No.: 558301

Sample Wastewater/Sludge

Marked: C-1-2
Capitol 3400
Sampled: 04/18/89, 3:00 p.m.

Received: 04/18/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	42.	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	130.	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date. April 25, 1989

Lab. No.. 558302

Sample. Wastewater/Sludge

Marked. C-2
Capitol 3400
Sampled: 04/18/89, 3:30 p.m.

Received: 04/18/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	16.	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	30.	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date: April 24, 1989

Lab. No.: 558301-03

Sample: Wastewater/Sludge

Marked: C-2
Capitol 3400
Sampled: 04/18/89

Received. 04/18/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010	LAB DUPLICATE	
Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	18.	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	33.	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

For Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date. April 25, 1989

Lab No.: 558301-03

Sample: Wastewater/Sludge

Marked: Capitol 3400
Sampled: 04/18/89

Received: 04/18/89

Submitted by. Same

REPORT OF LABORATORY TESTS

METHOD 8010	LAB SPIKE % RECOVERY
Chloromethane	--
Bromomethane	--
Vinyl chloride	--
Chloroethane	--
Methylene chloride	--
1,1-Dichloroethene	--
1,1-Dichloroethane	--
trans-1,2-Dichloroethene	--
Chloroform	96.
1,2-Dichloroethane	92.
1,1,1-Trichloroethane	91.
Carbon tetrachloride	83.
Bromodichloromethane	94.
1,2-Dichloropropane	--
trans-1,3-Dichloropropene	--
Trichloroethylene	96.
Dibromochloromethane	98.
1,1,2-Trichloroethane	--
cis-1,3-Dichloropropene	--
2-Chloroethylvinyl ether	--
Bromoform	92.
1,1,2,2-Tetrachloroethane	--
Tetrachloroethylene	102.
Chlorobenzene	93.
1,3-Dichlorobenzene	--
1,2-Dichlorobenzene	--
1,4-Dichlorobenzene	--

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date April 25, 1989

Lab No.: 558303

Sample: Wastewater/Sludge

Marked: D-1
Capitol 3400
Sampled: 04/18/89, 2:45 p.m.

Received: 04/18/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	46.	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	44.	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For. Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date May 08, 1989

Lab. No.: 558303

Sample. Wastewater/Sludge

Marked: D-1 Total Sample
Capitol 3400
Sampled: 04/18/89, 2:45 p.m.

Received: 04/18/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 5.0	ug/kg
Bromomethane	< 5.0	
Vinyl chloride	< 5.0	
Chloroethane	< 5.0	
Methylene chloride	< 5.0	
1,1-Dichloroethene	< 5.0	
1,1-Dichloroethane	120.	
trans-1,2-Dichloroethene	< 5.0	
Chloroform	< 5.0	
1,2-Dichloroethane	< 5.0	
1,1,1-Trichloroethane	200.	
Carbon tetrachloride	< 5.0	
Bromodichloromethane	< 5.0	
1,2-Dichloropropane	< 5.0	
trans-1,3-Dichloropropene	< 5.0	
Trichloroethylene	< 5.0	
Dibromochloromethane	< 5.0	
1,1,2-Trichloroethane	< 5.0	
cis-1,3-Dichloropropene	< 5.0	
2-Chloroethylvinyl ether	< 5.0	
Bromoform	< 5.0	
1,1,2,2-Tetrachloroethane	< 5.0	
Tetrachloroethylene	< 5.0	
Chlorobenzene	< 5.0	
1,3-Dichlorobenzene	< 5.0	
1,2-Dichlorobenzene	< 5.0	
1,4-Dichlorobenzene	< 5.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab No.: 516005

Sample. Waste

Marked B-1
Capitol 3400
Sampled: 03/31/89, 3:15 p.m.

Received: 03/31/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	< 1.0	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	< 1.0	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab. No: 516006

Sample: Waste

Marked: B-2
Capitol 3400
Sampled: 03/31/89, 3:00 p.m.

Received 03/31/89

Submitted by Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 1.0	ug/L
Bromomethane	< 1.0	
Vinyl chloride	< 1.0	
Chloroethane	< 1.0	
Methylene chloride	< 1.0	
1,1-Dichloroethene	< 1.0	
1,1-Dichloroethane	< 1.0	
trans-1,2-Dichloroethene	< 1.0	
Chloroform	< 1.0	
1,2-Dichloroethane	< 1.0	
1,1,1-Trichloroethane	< 1.0	
Carbon tetrachloride	< 1.0	
Bromodichloromethane	< 1.0	
1,2-Dichloropropane	< 1.0	
trans-1,3-Dichloropropene	< 1.0	
Trichloroethylene	< 1.0	
Dibromochloromethane	< 1.0	
1,1,2-Trichloroethane	< 1.0	
cis-1,3-Dichloropropene	< 1.0	
2-Chloroethylvinyl ether	< 1.0	
Bromoform	< 1.0	
1,1,2,2-Tetrachloroethane	< 1.0	
Tetrachloroethylene	< 1.0	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab No.: 516001

Sample: Soil

Marked A-1
Capitol 3400
Sampled: 03/31/89, 12:00 p.m.

Received: 03/31/89

Submitted by. Same

REPORT OF LABORATORY TESTS

METHOD 8080*

Alpha BHC	< 100.	mg/kg**
Lindane	< 100.	
Beta BHC	< 100.	
Heptachlor	< 100.	
Delta BHC	< 100.	
Aldrin	< 100.	
Heptachlor Epoxide	< 100.	
Endosulfan I	< 100.	
PP'-DDE	< 100.	
Dieldrin	< 100.	
Endrin	< 100.	
PP'-DDD	< 100.	
Endosulfan II	< 100.	
PP'-DDT	< 100.	
Endrin Aldehyde	< 100.	
Endosulfan Sulfate	< 100.	
Methoxychlor	< 100.	
Chlordane	< 100.	
Toxaphene	< 100.	
PCB(s)	140.	

< = less than the detection limit given

*Arochlor 1254

**Higher detection limits due to matrix interference; PCB contamination

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For. Water Resources Associates, Inc.
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date April 25, 1989

Lab No· 516001

Sample. Soil

Marked A-1
Capitol 3400
Sampled: 03/31/89, 12:00 p.m.

Received· 03/31/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8150		LAB DUPLICATE	LAB SPIKE % RECOVERY
2,4-D	< 20. ug/kg	< 20. ug/kg	99.
2,4-DB	< 20.	< 20.	--
2,4,5-T	< 10.	< 10.	--
Silvex	< 2.0	< 2.0	101.
Dalapon	< 100.	< 100.	--
Dicamba	< 10.	< 10.	--
Dichloroprop	< 20.	< 20.	--
Dinoseb	< 2.0	< 2.0	--
MCPA	< 4000.	< 4000.	--
MCPP	< 4000.	< 4000.	--

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates, Inc.
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab No.: 516001

Sample: Soil

Marked A-1
Capitol 3400

Received: 03/31/89

Sampled: 03/31/89, 12:00 p.m.

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8140

			LAB DUPLICATE		LAB SPIKE % RECOVERY
Diazinon	< 2.0	ug/kg	< 2.0	ug/kg	--
Disulfoton	< 5.0		< 5.0		--
Demeton	< 10.		< 10.		--
Parathion Methyl	< 2.0		< 2.0		83.
Malathion	< 5.0		< 5.0		96.
Parathion Ethyl	< 2.0		< 2.0		87.
Ethion	< 100.		< 100.		--
Azinphos Methyl	< 1000.		< 1000.		--

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 Telephone 254-6181

For. Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date. April 25, 1989

Lab. No.: 516002

Sample: Soil

Marked A-2
Capitol 3400
Sampled: 03/31/89, 12:30 p. m.

Received 03/31/89

Submitted by Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 10.	ug/kg
Bromomethane	< 10.	
Vinyl chloride	< 10.	
Chloroethane	< 10.	
Methylene chloride	< 10.	
1,1-Dichloroethene	< 10.	
1,1-Dichloroethane	< 10.	
trans-1,2-Dichloroethene	< 10.	
Chloroform	< 10.	
1,2-Dichloroethane	< 10.	
1,1,1-Trichloroethane	< 10.	
Carbon tetrachloride	< 10.	
Bromodichloromethane	< 10.	
1,2-Dichloropropane	< 10.	
trans-1,3-Dichloropropene	< 10.	
Trichloroethylene	< 10.	
Dibromochloromethane	< 10.	
1,1,2-Trichloroethane	< 10.	
cis-1,3-Dichloropropene	< 10.	
2-Chloroethylvinyl ether	< 10.	
Bromoform	< 10.	
1,1,2,2-Tetrachloroethane	< 10.	
Tetrachloroethylene	< 10.	
Chlorobenzene	< 10.	
1,3-Dichlorobenzene	< 10.	
1,2-Dichlorobenzene	< 10.	
1,4-Dichlorobenzene	< 10.	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For. Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab No.: 516003

Sample Soil

Marked: A-3
Capitol 3400
Sampled: 03/31/89, 1:00 p.m.

Received. 03/31/89

Submitted by. Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 10.	ug/kg
Bromomethane	< 10.	
Vinyl chloride	< 10.	
Chloroethane	< 10.	
Methylene chloride	< 10.	
1,1-Dichloroethene	< 10.	
1,1-Dichloroethane	< 10.	
trans-1,2-Dichloroethene	< 10.	
Chloroform	< 10.	
1,2-Dichloroethane	< 10.	
1,1,1-Trichloroethane	< 10.	
Carbon tetrachloride	< 10.	
Bromodichloromethane	< 10.	
1,2-Dichloropropane	< 10.	
trans-1,3-Dichloropropene	< 10.	
Trichloroethylene	< 10.	
Dibromochloromethane	< 10.	
1,1,2-Trichloroethane	< 10.	
cis-1,3-Dichloropropene	< 10.	
2-Chloroethylvinyl ether	< 10.	
Bromoform	< 10.	
1,1,2,2-Tetrachloroethane	< 10.	
Tetrachloroethylene	< 10.	
Chlorobenzene	< 10.	
1,3-Dichlorobenzene	< 10.	
1,2-Dichlorobenzene	< 10.	
1,4-Dichlorobenzene	< 10.	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date. April 25, 1989

Lab No. 516003

Sample: Soil

Marked A-3
Capitol 3400
Sampled: 03/31/89, 1:00 p.m.

Received: 03/31/89

Submitted by. Same

REPORT OF LABORATORY TESTS

METHOD 8080*

Alpha BHC	< 10.	ug/kg
Lindane	< 10.	
Beta BHC	< 10.	
Heptachlor	< 10.	
Delta BHC	< 50.	
Aldrin	< 10.	
Heptachlor Epoxide	< 50.	
Endosulfan I	< 50.	
PP'-DDE	1200.	
Dieldrin	< 10.	
Endrin	< 50.	
PP'-DDD	< 50.	
Endosulfan II	< 20.	
PP'-DDT	44.	
Endrin Aldehyde	< 100.	
Endosulfan Sulfate	< 200.	
Methoxychlor	< 100.	
Chlordane	< 50.	
Toxaphene	< 200.	
PCB(s)	6200.	

< = less than the detection limit given

*Arochlor 1254

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab. No. 516004

Sample Soil

Marked A-4
Capitol 3400
Sampled: 03/31/89, 1:20 p.m.

Received: 03/31/89

Submitted by. Same

REPORT OF LABORATORY TESTS

METHOD 8010

Chloromethane	< 10.	ug/kg
Bromomethane	< 10.	
Vinyl chloride	< 10.	
Chloroethane	< 10.	
Methylene chloride	< 10.	
1,1-Dichloroethene	< 10.	
1,1-Dichloroethane	< 10.	
trans-1,2-Dichloroethene	< 10.	
Chloroform	< 10.	
1,2-Dichloroethane	< 10.	
1,1,1-Trichloroethane	< 10.	
Carbon tetrachloride	< 10.	
Bromodichloromethane	< 10.	
1,2-Dichloropropane	< 10.	
trans-1,3-Dichloropropene	< 10.	
Trichloroethylene	< 10.	
Dibromochloromethane	< 10.	
1,1,2-Trichloroethane	< 10.	
cis-1,3-Dichloropropene	< 10.	
2-Chloroethylvinyl ether	< 10.	
Bromoform	< 10.	
1,1,2,2-Tetrachloroethane	< 10.	
Tetrachloroethylene	< 10.	
Chlorobenzene	< 10.	
1,3-Dichlorobenzene	< 10.	
1,2-Dichlorobenzene	< 10.	
1,4-Dichlorobenzene	< 10.	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

For: Water Resources Associates, Inc.
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date April 25, 1989

Lab No: 516001-03

Sample: Soil

Marked. Capitol 3400
Sampled: 03/31/89

Received 03/31/89

Submitted by. Same

REPORT OF LABORATORY TESTS

MODIFIED METHOD 8015

SAMPLES MARKED	TOTAL PETROLEUM HYDROCARBONS	
A-1	< 20.	mg/kg
A-2	< 20.	
A-3	< 20.	

QUALITY ASSURANCE/QUALITY CONTROL DATA

Lab Duplicate, % Range ±	2.
Lab Spike, % Recovery	104.
Extraction: 04/03/89	
Analysis: 04/03/89	

< = less than the detection limit given

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For: Water Resources Associates, Inc.
Attn: Ed Ricci
2702 North 44th Street, Suite 101B
Phoenix, Arizona 85008

Date. April 25, 1989

Lab No 516001-04

Sample: Soil

Marked Capital 3400
Sampled: 03/31/89
See Below

Received: 03/31/89

Submitted by: Same

REPORT OF LABORATORY TESTS

METHOD 8020

SAMPLES MARKED	BENZENE	TOLUENE	ETHYLBENZENE	XYLENE(S)
A-1	< 10.	< 10.	< 10.	< 10. ug/kg
A-2	< 10.	< 10.	< 10.	< 10.
A-3	< 10.	< 10.	< 10.	< 10.
A-4	< 10.	< 10.	< 10.	< 10.

QUALITY ASSURANCE/QUALITY CONTROL DATA

Lab Duplicate, % Range ±	0.*	0.*	0.*	0.*
Lab Spike, % Recovery	89.	83.	--	81.

Extraction: 04/07/89
Analysis: 04/07/89

< = less than the detection limit given

*Duplicates below detection

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 · Telephone 254-6181

For: Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date: April 25, 1989

Lab No.: 516005-07

Sample: Waste

Marked Capitol 3400
Sampled: 03/31/89
See Below

Received 03/31/89

Submitted by: Same

REPORT OF LABORATORY TESTS

SAMPLES MARKED	NITRATE-N*	PHOSPHATE-P*	POTASSIUM*	
B-1	0.8	< 0.4	1.5	mg/L
B-2	1.6	< 0.4	1.8	
C-1	0.5	19.	8.1	

< = less than the detection limit given

*Note: parameters analyzed on liquid fraction of sample

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

Arizona Testing Laboratories

817 West Madison Phoenix, Arizona 85007 Telephone 254-6181

For Water Resources Associates
Attn: Ed Ricci
2702 North 44th Street
Phoenix, Arizona 85008

Date. April 25, 1989

Lab No.: 516001-04

Sample: Soil

Marked Capitol 3400
Sampled: 03/31/89
See Below

Received. 03/31/89

Submitted by: Same

REPORT OF LABORATORY TESTS

SAMPLES MARKED	NITRATE-N*	PHOSPHATE-P*	POTASSIUM*	
A-1	4.1	2.0	190.	mg/kg
A-2	37.	9.4	57.	
A-3	47.	3.0	54.	
A-4	7.0	0.82	32.	

*Note: 1-to-5 water extract calculated to original sample

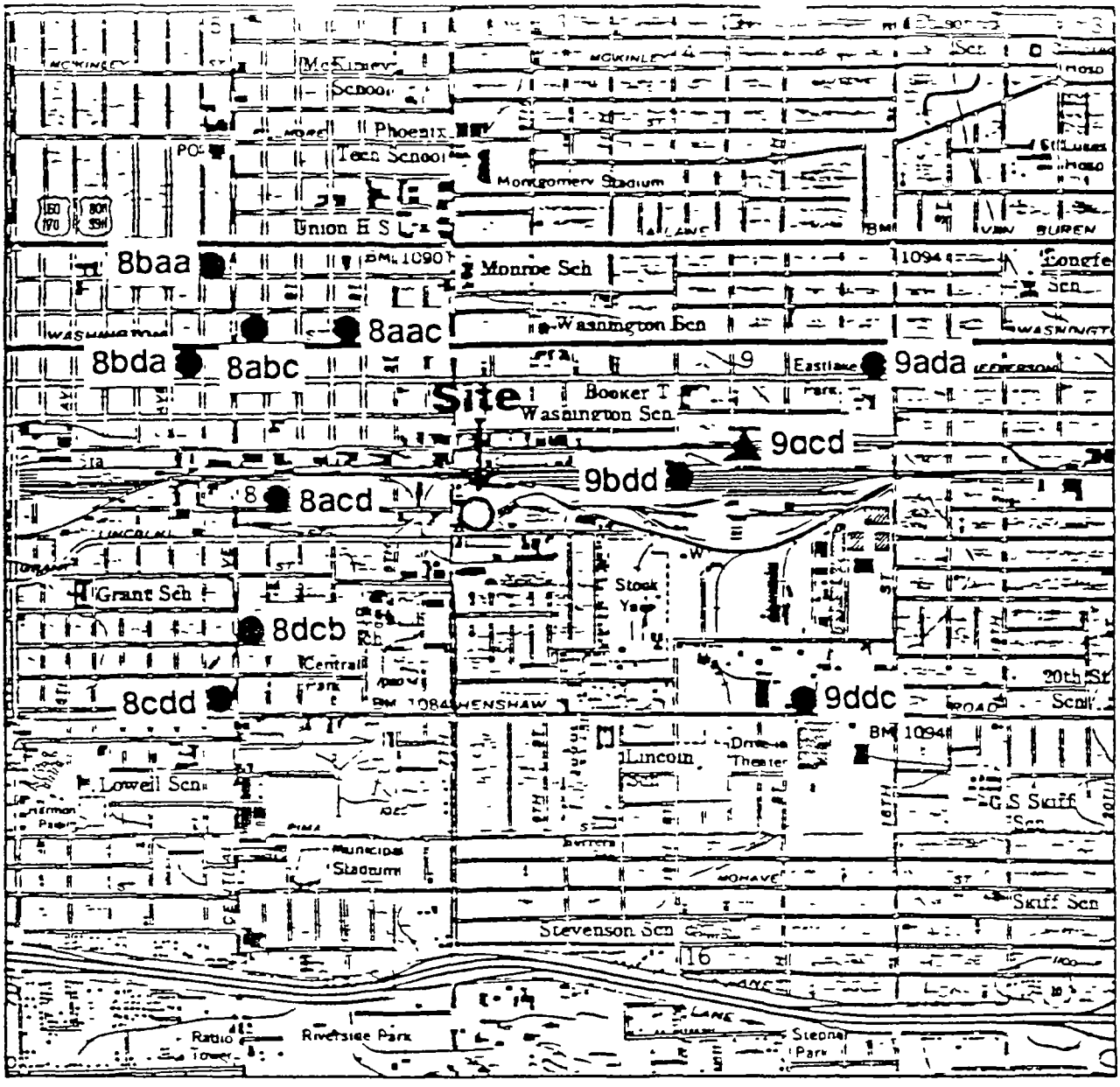
Respectfully submitted,

ARIZONA TESTING LABORATORIES

Robert J. Drake

ATTACHMENT 4

UPGRADIENT AND DOWNGRADIENT WATER QUALITY



BASE MAP : USGS 7.5 Minute Quadrangle - Phoenix, Az.

LEGEND

● Well Location, Water Quality Data Reported

▲ Well Location, Water Quality Data Not Available

NORTH

2000 0 2000 FEET

Water Resources Associates, Inc.		WELLS WITH AVAILABLE WATER QUALITY DATA IN VICINITY OF CAPITOL ENGINEERING PROPERTY
PROJECT NO. 3400	DRAWN BY KMA	
DATE 2-15-89	CHECKED BY KDH	

SUMMARY OF REPORTED VOLATILE ORGANIC COMPOUNDS (IN PPB) IN WELLS UPGRADIENT AND DOWNGRADIENT FROM CAPITOL ENGINEERING

			UPGRADIENT WELLS				DOWNGRADIENT WELLS										
Parameters	Federal MCL (ppb)	State Action Level (ppb)	9ada 9/27/84 K	9ada 7/29/87 ADEQ	9ddc 8/1/88 K	9bdd 9/27/84 K	8aac 3/18/86 K	8acd 9/26/86 K	8dcb 9/28/84 K	8abc 9/23/86 ADEQ	8bdal 8/1/88 K	8bda2 9/27/84 ADEQ	8bda2 8/1/88 K	8cdd1 8/1/88 K	8cdd2 8/1/88 K	8baa 9/27/84 ADEQ	8baa 9/23/86 ADEQ
1,1,1-TCA	200	200	-	4 4	-	-	-	-	-	0 5 (tr)	<0.2	-	0 3	0.5	<0 2	-	0 5 (tr)
1,1-DCA	-	-	-	4 3	0 4	-	-	-	-	0.5 (tr)	2.0	-	3.1	0.6	0 4	-	1 [illegible]
1,1-DCE	7.0	7 0	11, 10	3 4	3.4	-	-	-	-	0 5 (tr)	7.3	-	15	2.3	3.4	-	5
Chloroform	100	3 0	5, 5	4 5	-	5 0	-	6 0	5 0	0 5 (tr)	-	-	-	-	-	5 0	4 3
Methylene Chloride	-	4 7	48, 18	6 3	-	43	-	-	18	0 5 (tr)	-	-	-	-	-	20	0 5 (tr)
TCE	5 0	5.0	44, 41	61 1	4 9	5.0	16	14	7.4	3 0	37.5	12 0	58	5.7	4 9	202	300
T-1,2 DCE	5.0	70	-	4 3	0.8	-	-	-	-	0 5 (tr)	16.5	-	22 8	1 6	0 8	23	43
Freon 11	-	1 0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 4
PCE	-	1 0	-	5.2	0 3	5.0	-	-	5.0	0 5 (tr)	1.4	-	2.0	1.4	0.3	5 0	2 5
Benzene	5.0	5.0	-	-	-	-	-	-	-	-	-	5 0	-	-	-	-	-
1,2-DCA	5.0	5.0	5, -	-	-	-	-	-	-	0 5 (tr)	0 4	-	0.5	0 6	<0.2	5 0	2 7
Bromodichloromethane	100	-	-	-	-	-	-	-	-	-	<0 2	-	<0.2	<0.2	<0 2	-	0 5 (tr)
Carbon Tetrachloride	5.0	5.0	-	-	-	-	-	-	-	0 5 (tr)	-	-	-	-	-	-	0 5 (tr)
Chlorobenzene	-	60	-	-	-	-	-	-	-	0 5 (tr)	-	-	-	-	-	-	0 5 (tr)
1,4-Dichlorobenzene	75	-	-	-	-	-	-	-	-	0 5 (tr)	-	-	-	-	-	-	-
Chloromethane	-	0.5	-	-	-	-	-	-	-	0.5 (tr)	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	0.3	<0 2	-	-

NOTES:

- ppb = parts per billion
- (tr) = trace levels reported
- - = dashed lines indicate that data results were not reported and are presumed to be below detectable levels
- K = information extracted from Kleinfelder, October, 1988, Draft Phase I Report, Eastlake Park Area
- ADEQ = information extracted from Arizona Department of Environmental Quality files on water quality

February 14, 1989
Water Resources Associates, Inc

ATTACHMENT 5

OWNERSHIP AND PROPERTY USAGE RECORDS

OWNERSHIP AND USAGE OF PROPERTY AT

724 East Southern Pacific Drive

Owner	Year	Lessee	Year	Uses
Southern Pacific Railroad Company	Before late 40's	-	-	Rail Yard
Capitol Engineering	Late 40's or early 50's to present	-	-	Metal fabrication and painting

OWNERSHIP AND USAGE OF PROPERTY AT

415 South 7th Street

Owner	Year	Lessee	Year	Uses
Southern Pacific Railroad Company	Unknown	-	-	Rail Yard
Comstock Steel Company	Before the 50's	-	-	Pipes, Steel Yard
Rio Grande Steel	Early 50's to 1981	Arizona Welding Equipment Company	50's to July '60	Welding Gases and and Supplies
		Skyline Manufacturing	1968-69	Painting
		Painting Company	unknown	Painting
		Phoenix Manufacturing	1976-1981	Evaporative Cooler Manufacturer
Capitol Engineering Company	1981 to present	-	-	Metal Fabrication and Painting

OWNERSHIP AND USAGE OF PROPERTY AT

419 South 7th Street

Owner	Year	Lessee	Year	Uses
Southern Pacific Railroad Company	Before 1983	-	-	Rail Yard
		Utility Supply Light Fixture	Early 60's to 1976	Manufacture of street light poles nuts, bolts, hardware
		Phoenix Manufacturing	1976-1983	Evaporative cooler Plant
Capitol Engineering Company	1983 to	-	-	Metal Fabrication and Painting